

Claims:

What is claimed is:

1       1. In a data processing system having multiple logical partitions, a method of sending data  
2 from a first logical partition to a second logical partition comprising:

3             establishing a send queue in the first logical partition;

4             establishing a receive queue in the second logical partition;

5             registering the send queue in a lookup table available to all of the logical partitions;

6             registering the receive queue in said lookup table; and

7             executing a send from the first logical partition which interrogates the lookup table to  
8 locate said send queue and said receive queue and sends the data in the send queue in the first  
9 logical partition to the receive queue in the second logical partition.

1       2. The method of claim 1 wherein said send queue and said receive queue are established in  
2 accordance with queued direct input/output (QDIO) architecture.

1       3. The method of claim 1 wherein said lookup table is stored in a hardware storage area of  
2 the data processing system.

1       4. The method of claim 1 wherein input/output (I/O) operations for each logical partition is  
2 conducted via a subchannel associated with each logical partition, each logical partition having an  
3 identification, and the send queue is registered in said lookup table using the logical partition  
4 identification and subchannel number as a key.

1       5. The method of claim 4 wherein said receive queue has an internet protocol (IP) address  
2 and said receive queue is registered in said lookup table using the IP address of the receive queue  
3 as the key.

1       6. The method of claim 5 further comprising linking the registration using said logical  
2 partition identification and subchannel number with the registration of said IP address by a queue  
3 control which points to said send queue and said receive queue.

1       7. The method of claim 6 further comprising setting an indication in the hardware storage  
2 area indicating that the send instructions from the subchannel of the first logical partition is to  
3 send data from said send queue of the first logical partition to the receive queue of the second  
4 logical partition, and said send instruction interrogates said indication.

1       8. The method of claim 7 further comprising:  
2              priming said send queue with data to be transferred, said data including the IP address of  
3 the receive queue to which said data is to be transferred;  
4              searching said lookup table using the logical partition identification and subchannel  
5 number as a key to locate the send register registered in the lookup table with that key;  
6              interrogating the data in said send queue to find the IP address of the receive queue;  
7              searching said lookup table using said IP address as a key to locate the receive queue  
8 registered in the lookup table with that key; and  
9              sending the data in the located send queue to the located receive queue to complete the  
10 transfer.

1       9. In a data processing system having multiple logical partitions, an apparatus for sending  
2 data from a first logical partition to a second logical partition comprising:  
3              means for establishing a send queue in the first logical partition;  
4              means for establishing a receive queue in the second logical partition;  
5              means for registering the send queue in a lookup table available to all of the logical  
6 partitions;  
7              means for registering the receive queue in said lookup table; and  
8              means for executing a send from the first logical partition which interrogates the lookup  
9 table to locate said send queue and said receive queue and sends the data in the send queue in the  
10 first logical partition to the receive queue in the second logical partition.

1       10.     The apparatus of claim 9 wherein said means for establishing said send queue and said  
2 receive queue establish said send queue and said receive queue in accordance with queued direct  
3 input/output (QDIO) architecture.

1       11.     The apparatus of claim 9 further comprises a hardware storage area of said data processing  
2 system for storing said lookup table.

1       12.     The apparatus of claim 9 further comprising a subchannel associated with each logical  
2 partition for conducting input/output (I/O) operations for the associated logical partition, each  
3 logical partition having an identification, and said means for registering said send queue  
4 registering said send queue in said lookup table using the logical partition identification and  
5 subchannel number as a key.

1       13.     The apparatus of claim 12 wherein said receive queue has an internet protocol (IP) address  
2 and said means for registering said receive queue in said lookup table registering said receive  
3 queue using the IP address of the receive queue as the key.

1       14.     The apparatus of claim 13 further comprising queue control for linking the registration  
2 using said logical partition identification and subchannel number with the registration of said IP  
3 address, said queue control pointing to said send queue and said receive queue.

1       15.     The apparatus of claim 14 further comprising an indication in the hardware storage area  
2 for interrogation by said send instruction, said indication when set indicating when send  
3 instructions from the subchannel of the first logical partition is to send data from said send queue  
4 of the first logical partition to the receive queue of the second logical partition.

1       16.     The apparatus of claim 15 further comprising:  
2              means for priming said send queue with data to be transferred, said data including the IP  
3 address of the receive queue to which said data is to be transferred;

4 means for searching said lookup table using the logical partition identification and  
5 subchannel number as a key to locate the send register registered in the lookup table with that key;  
6 means for interrogating the data in said send queue to find the IP address of the receive  
7 queue;  
8 means for searching said lookup table using said IP address as a key to locate the receive  
9 queue registered in the lookup table with that key; and  
10 means for sending the data in the located send queue to the located receive queue to  
11 complete the transfer.

1 17. In a data processing system having multiple logical partitions, an apparatus for sending  
2 data from a first logical partition to a second logical partition comprising:  
3 a send queue in the first logical partition;  
4 a receive queue in the second logical partition;  
5 a lookup table available to all of the logical partitions, said lookup table having registered  
6 therein said send queue and said receive queue; and  
7 a device driver in said first logical partition which executes a send for interrogating the  
8 lookup table to locate said send queue and said receive queue, and sending the data in the send  
9 queue in the first logical partition to the receive queue in the second logical partition.

1 18. The apparatus of claim 17 wherein said send queue and said receive queue are established  
2 in accordance with queued direct input/output (QDIO) architecture.

1 19. The apparatus of claim 17 further comprising a hardware storage area in said data  
2 processing system for storing said lookup table.

1 20. The apparatus of claim 17 further comprising a subchannel associated with each logical  
2 partition for conducting input/output (I/O) operations for the associated logical partition, each  
3 logical partition having an identification, and said send queue is registered in said lookup table  
4 using the logical partition identification and subchannel number as a key.

1       21. The apparatus of claim 20 wherein said receive queue has an internet protocol (IP) address  
2 and said receive queue is registered in said lookup table using the IP address of the receive queue  
3 as the key.

1       22. The apparatus of claim 21 further comprising queue control for linking the registration  
2 using said logical partition identification and subchannel number with the registration of said IP  
3 address, said queue control pointing to said send queue and said receive queue.

1       23. The apparatus of claim 21 further comprising an indication in the hardware storage area  
2 for interrogation by said send instruction, said indication when set indicating when said send  
3 instruction from the subchannel of the first logical partition is to send data from said send queue  
4 of the first logical partition to the receive queue of the second logical partition.

1       24. The apparatus of claim 23 further comprising:  
2              data to be transferred in said send queue, said data including the IP address of the receive  
3              queue to which said data is to be transferred;  
4              hardware searching said lookup table using the logical partition identification and  
5              subchannel number as a key to locate the send register registered in the lookup table with that key;  
6              hardware interrogating the data in said send queue to find the IP address of the receive  
7              queue;  
8              hardware searching said lookup table using said IP address as a key to locate the receive  
9              queue registered in the lookup table with that key; and  
10             means in said device driver for sending the data in the located send queue to the located  
11             receive queue to complete the transfer.